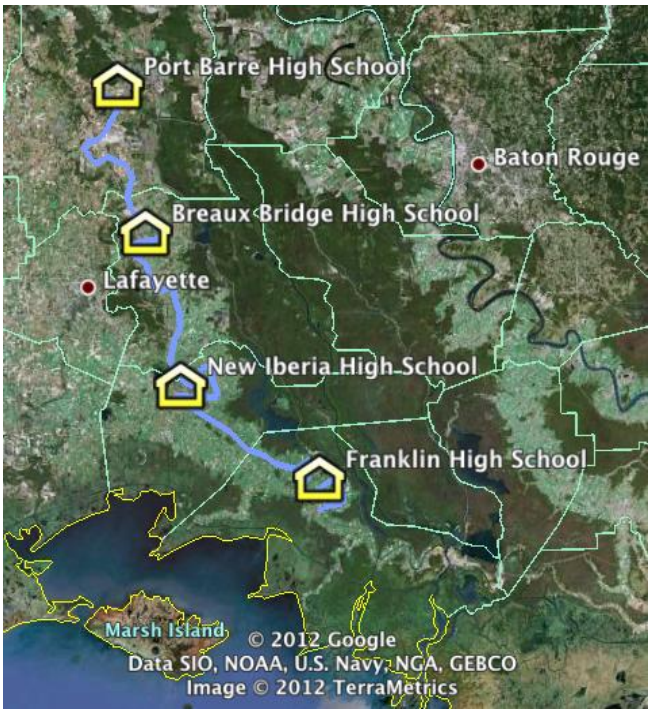
I. Project Title and Project Purpose Statement

Project Title: Acadiana RC&D Watershed School Project

Project Purpose Statement: To Promote Student Education Empowerment to maintain a healthy watershed under the Clean Water Act

Project Summary: Acadiana Resource Conservation & Development, Inc. (ARCD) seeks to encourage public school participation and access to information on the social, environmental, economic and health-related aspects of the Bayou Teche Watershed. Specifically, ARCD intends to use the teaching model developed in the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01) to continue teaching Environmental Science students at Port Barre High (St. Landry Parish), Breaux Bridge High (St. Martin Parish), New Iberia High (Iberia Parish) and Franklin High (St. Mary Parish) the fundamentals of maintaining a healthy watershed through education and activities during the 2014-2015 school year. The model includes two learning sessions with associated activities. The goal of the proposed project is twofold (1) to educate 100+ students during the 2014-2015 school year on (a) the causes, effects and reduction of water pollution and (b) ability to distinguish beneficial plants, animals and fish within the watershed and (2) to educate and empower students' capabilities to maintain a healthy watershed.

Grant Proposal Schools (yellow) and Bayou Teche (blue)



During the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01), a teaching model was developed and administered to 200+ students at Port Barre High, Breaux Bridge High, New Iberia High and Franklin High schools which enhanced the 2008-2011 cooperative grant between ARCD and Louisiana DEQ (CFMS #672674 and OCR #853-900319) which established a watershed plan for the impaired Bayou Teche Watershed.

The intent of this proposed project is to continue the efforts of the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01) and the 2008-2011 Watershed Plan by educating and empowering students not previously reached through training and demonstrations related to the causes, effects and prevention of water pollution as addressed in the Clean Water Act, Section 104(b)(3) in order to maintain a healthy watershed. With the assistance of multiple partners, including but not limited to, high school teachers from each of the targeted high schools, Louisiana DEQ, Louisiana Wildlife & Fisheries, USDA Natural Resource Conservation Services, Tour du Teche, Teche Ecology Culture and History Education Project (TECHE Project), and the University of Louisiana at Lafayette Research Facility - Ecology Center (ULL-CEET), ARCD will used build on developed educational materials and activities to be used for the education of 100+ students in 2014-2015 school year.

Project Location: 703 Thoroughbred Drive, Lafayette, Louisiana 70507
Environmental Statute: Clean Water Act, Section 104(b) (3) and Solid Waste Disposal Act, Section 80001(1)

II. Environmental and Public Health Information about the Affected Community

Bayou Teche begins in Porte Barre where it takes water from Bayou Courtableu, then flows southward to meet the Lower Atchafalaya River at Patterson. Parishes and towns along the Teche include St Landry Parish - Port Barre, Leonville, and Arnaudville; St. Martin Parish – Cecilia, Breaux Bridge, Parks, and St. Martinville; Iberia Parish – Loreauville, New Iberia, and Jeanerette; St Mary Parish – Charenton, Baldwin, Berwick, Franklin, and Patterson.

The local environmental and public health issues that this project seeks to address include the affected communities in the parishes of Iberia, St. Landry, St. Martin and St. Mary. According to the US Census Bureau, these four parishes contain over 264,000 people including underserved, low-income, minority, and/or tribal communities. All four parishes have higher ratios of African Americans, Black-owned businesses and higher poverty ratios than the national averages and some even higher than Louisiana state averages. The percentage of students receiving "free" or "reduced lunch" is higher than the state level of 55% (see below).

Port Barre - 59% Breaux Bridge - 62% New Iberia - 56% Franklin - 77%

Once a vibrant waterway used for transportation, exportation and recreation, Bayou Teche eventually became a dumping ground of broken appliances and trash, debris from fallen trees and other plant materials amassed from past storms and hurricanes such as Hurricane Andrew that went directly up Bayou Teche in 1992, as well as other pollutants from unrestricted drainage from businesses, citizens and farms. In 2008-2011 under a Cooperative Agreement with LA DEQ (CFMS No 672674 and OCR No 853-900319), ARCD developed a draft watershed improvement plan while actively initiating selected implementation of the watershed plan. Under the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01), ARCD developed an educational model to educate high school students how to maintain their watershed which enhances the continued work in the Bayou Teche Watershed.

The Bayou Teche flows along the highest part of an alluvial ridge and is largely contained by a natural levee system. It is similar to the Mississippi in that the natural levee conveys nonpoint runoff away from the river system. Bayou Teche is a distributary in that it acts like a flume which channels flow from Bayou Cocodrie and Bayou Courtableau to the Vermillion River via the Ruth Canal and Bayou Fusilier. Loreauville Canal drains some of Bayou Teche waters into Lake Fausse Point before the Teche flows into the Wax Lake outlet that drains into the Gulf of Mexico. A multitude of other tributaries drain into Bayou Teche including Bayou Toulouse, Little Teche, Del Puent, Tortue, and Nelson, Pharr, and Sandager Canal.

The Bayou Teche is 125 miles long and much of the drainage area to the waterway is limited to the immediate shores. The watershed stretches to about 500 meters on both sides of the bayou

where it is confined by a natural levee. Throughout this reach, it meanders through many townships and cities such as Port Barre, Breaux Bridge, New Iberia, Jeanerette, and Franklin to name a few. Bayou Teche is characterized by an alternating depression ridge, which results in slow flow rates and creates the formation of standing water and lakes during much of the year. The watershed receives about 56 inches of precipitation a year. The narrow watershed is mostly settled with residential homes and yards with intermittent agricultural lands. Agriculture in the southern half of the watershed is almost exclusively sugarcane. Soybean, rice, pasture and sugarcane are grown in the northern half.

Historically, Bayou Teche received extensive channelization since it served as the main artery of commerce and transportation for the region. Continued development in the Teche River Basin has required dredging of the bayou for flood control management, crop irrigation and in some instances navigation. Channelization has created uniform water depths and reduced flow gradients and velocities. All of these hydromodification activities have affected dissolved oxygen (DO) levels in the reaches of the Bayou Teche.

Land uses such as agriculture, urban, industry, and natural systems contribute to the loading of chemical, mineral, and biological elements to the waterways. Hydromodification affects the transport of water through the stream networks and often reduces the capacity of riparian zones to retain sediments on stream bank. Residential home sewage from faulty septic systems also contributes to the nutrient and organic loadings to the waterways. NPS pollutant loadings to the Teche within the watershed are the result of three main sources: agriculture, urban, and natural background. The majority of the land is used for agriculture. The primary agricultural crops in the Bayou Teche consist of sugarcane, soybeans, and grazing pasture and there is some aquaculture in the form of crawfish farming during the winter months. Rain events suspend sediments, fertilizers, and pesticides and transport the agriculture runoff to the reaches of the bayou. Runoff from fields soon after tillage operations, fertilizer applications, and other field operations contains greater levels of sediments and pollutants. The cumulative effect of agricultural nonpoint pollutants results in potentially damaging concentrations of nitrogen, phosphorus, sediments, turbidity, and pesticide residue in the water bodies.

The affected community is disproportionately impacted by the environmental harms associated with the Bayou Teche by their close proximity to the bayou and economic dependency on its health. Much of the Cajun culture relies on a pristine environment to draw tourists, as well as provide livelihoods for the next generation. Fishing, farming, hunting and boating activities, whether they be for a livelihood, subsistence living or recreation all require a healthy bayou. As Bayou Teche is degraded, fewer economic opportunities will exist for the teenagers this project aims to engage. The affected community will benefit from the results of this project by providing information and resources to promote the health of the watershed.

III. Organization's Historical Connection to Affected Community

ARCD's regional area is composed of the parishes of Iberia, St. Landry, St. Martin and St. Mary (the grant proposal affected communities) as well as Acadia, Avoyelles, Evangeline, Lafayette and Vermilion parishes. The Council was established in 1995 by the Natural Resources Conservation Service in cooperation with other USDA agencies. Each RC&D Council operates as an independent non-profit organization. Many of ARCD members either live on or in close

proximity to Bayou Teche and have a personal stake in the success of Bayou Teche Watershed and is one of the reasons ARCD seeks to acquire funding from the EPA Environmental Justice Small Grant; ARCD council members want the future generation to maintain vigilance on keeping a healthy watershed for generations to come. With funding from this grant, ARCD will continue educating students along Bayou Teche using the educational model developed with the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01) to educate additional students on the knowledge of maintaining a healthy watershed whereby assuring a constant reduction, prevention, and elimination of water pollution.

With funding from Louisiana DEQ through a Cooperative Agreement (CFMS #672674 and OCR #853-900319), ARCD delivered its draft watershed plan to Louisiana DEQ in 2011. During the three-year planning process, ARCD worked with local governments, municipalities, business, schools, and citizens to organize and develop the watershed implementation plan. ARCD actively supported several events to draw public attention to issues of watershed health including water quality monitoring training sessions for professionals and citizens. During 2013-2014 ARCD developed a teaching model on the fundamentals of maintaining a healthy watershed through education and activities on the causes, effects and reduction of water pollution and ability to distinguish beneficial plants, animals and fish within the watershed with funding from 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01). ARCD intends to use the aforementioned model to teach an additional 100+ Environmental Science students at the four high schools along Bayou Teche.

ARCD participates in outreach activities like Tour du Teche Kayak and Canoe race, Fiddlers on the Bayou, Master Farmers Training, and the website development for The Teche Project. ARCD worked with agencies like Louisiana DEQ and Natural Resource Conservation Services' Soils Scientists to update land-use maps. ARCD worked with Louisiana Wildlife & Fisheries evaluate fish populations in the bayou. Finally, ARCD completed the final watershed protection plan that encompasses the ecological health of the bayou, along with the economic, recreational and cultural interests of stakeholders, and DEQ requirements for non-point source pollution control.

ARCD is currently based at the University of Louisiana at Lafayette Research Facility - Ecology Center (previously known as the Ecology and Environmental Technology Center and are partners on the Louisiana Native Plant Initiative and Midland Coastal Prairie Restoration Project. Andre' Daugereaux, Manager for the ULL Ecology Center will provide native plant samples such as the Louisiana Iris (*Iris hexagona)* and the Bald Cypress (*Taxiodium distichum*) for student identification and education. ULL Ecology Center was a partner during the Watershed Plan and continues to promote Bayou Teche recreational activities.

ARCD will again partner with Louisiana Department of Environmental Quality (LA DEQ) and Louisiana Wildlife and Fisheries (LA WLF). ARCD worked with LA DEQ on several projects including: Teche Watershed Plan (2008–2011), Coulee Baton-Sewer Micro-Watershed Rural Sewer Improvement Project (2008–2009); and Blue Thumb Project (2001–2003). ARCD will work with Mr. Jeff Jackson, Environmental Scientist Manager, to provide educational materials and presentation on "Investigative Ambient Sampling". Ms. Venice Ortego, Louisiana Wild Life and Fisheries field office in St. Landry Parish will provide materials for the type of fish and wildlife found in the Bayou Teche Watershed.

ARCD will partner with USDA Natural Resource Conservation Services (NRCS) to assist with technical support. Holly Martien, State Public Affairs Specialist with USDA NRCS was instrumental in providing technical support and materials in the recent EPA EJ Grant Stuart Gardner, NRCS Grazing Specialist, who lives in St. Landry Parish works with ARCD to provide technical support to local farmers on and along Bayou Teche. Mitchell Mouton, Soil Science Biologist, will provide soil sample demonstrations showing how rain as well other elements such as oil, gas, pesticides, etc. are absorbed through the soil and ultimately into the ground water.

ARCD has worked closely with Blake Couvillion, a homeowner in Arnaudville on Bayou Teche and founder of the Teche Ecology Culture and History Education Project (TECHE Project). The TECHE Project is an organization dedicated to protecting and promoting this historic waterway. TECHE Project is comprised of community leaders and homeowners who live along the Bayou Teche and have a stake in the Bayou Teche healthy watershed and will partner with ARCD to promote student participation pollution control.

ARCD maintains its partnership with Tour du Teche on various projects – most recently revamping the Bayou Teche Passport. ARCD will work with Nicole Patin from Tour du Teche to encourage students from each school to participate in the Tour du Teche in October 2015. Tour du Teche is comprised of community leaders and home-owners along the Bayou Teche and who have a financial and personal stake in a healthy Bayou Teche watershed.

IV. Project Description

ARCD seeks to continue its efforts using the educational model developed through the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01) to help protect and maintain a healthy watershed through educational sessions and activities designed to address the causes, effects, prevention, reduction, and elimination of water pollution - Clean Water Act, Section 104(b)(3) and Solid Waste Disposal Act, Section 80001(1).

Acadiana RC&D seeks educate and empower 100+ students at four high schools in the Bayou Teche Watershed - Port Barre High (St. Landry Parish), Breaux Bridge High (St. Martin Parish), New Iberia High (Iberia Parish), and Franklin High (St. Mary Parish) to become stewards of their watershed through learning and activity sessions using informational teaching materials developed by ARCD. The schools chosen to participate in the grant process were chosen by design – Port Barre High School is located at Bayou Teche's headwaters; Breaux Bridge High and New Iberia High school are centrally located between the headwaters and the lower extremity of Bayou Teche; Franklin High School is located lower extremity of Bayou Teche. The towns of each of these high schools are actively engaged in Tour du Teche kayak and canoe races as well as the Teche Project. Students will be encouraged to participate in Tour du Teche, which will help to showcase the student involvement, commitment and enthusiasm garnered from the grant program.

Two one-hour educational sessions developed by ARCD with the assistance and technical support from high school teachers, ULL-CEET, LA DEQ, LA WLF, USDA-NRCS, and TECHE Project ("partners") will be used to target 100+ students at Port Barre High, Breaux Bridge High, New Iberia High and Franklin High on the causes, effects and reduction of water pollution and ability to distinguish beneficial plants, animals and fish within the Teche Watershed. The

sessions will take place between October 2014 and May 2015. These sessions will be used to advance sustainable development and cleaning up the communities to promote children's health and environmental justice.

Associated activities will be used in conjunction with the educational sessions. ARCD will enlist the assistance of our soil biologist partners at USDA NRCS to give a soils demonstration to demonstrate that over-use of pesticides, lawn fertilizers or spillage of common car oil and/or gas eventually makes it way to the bayou. . ARCD will also enlist the assistance of Louisiana Department of Environmental Quality to provide a presentation and discussion of "LDEQ Ambient Water Sampling". Activities and experiments will also include classroom experiments and demonstrations. Student participation in experiments and demonstration helps to engage and reinforce learning on the causes, effects, prevention, and elimination of water pollution.

During the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01), ARCD became aware that most low-income students were uninformed of the recreational activities taking place in Bayou Teche. For this reason ARCD will enlist the assistance our TECHE Project and Tour du Teche partners to encourage students to participate in the Tour due Teche Canoe Races held annually in October. Tour du Teche was formed by the TECHE Project in conjunction with ARCD's 2008 Watershed Plan. The Tour du Teche is a paddle trail that extends from the mouth of Bayou Teche at Port Barre to its terminus in Berwick, Louisiana, a 130 mile waterway that crosses four parishes. The creation of the paddle trail enhances outdoor recreation possibilities, economic development opportunities, and education regarding the traditional uses of the bayou, such as transportation and food source. Events are staged at various towns during the three-day event showcasing the Teche Country.

As part of the Tour du Teche experience, Passports – Personal Guide to the Bayou Teche Paddle Trail--will be distributed to students and other participants. The Passport is an educational booklet developed by ARCD during the Watershed Plan and revised in 2014 through funding from the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01). The Passport gives a brief description of Bayou Teche and will be used for identifying common plants and animals found along the watershed. The Bayou Teche Passport will be used during the teaching sessions.

V. Organizational Capacity and Programmatic Capability

ARCD uses Quick Books Pro 2010 as its accounting program as well Microsoft Office Excel 2007. Quick Books Pro 2010 is set up with class divisions per project which tracts income and expenses. Microsoft Office Excel 2007 is also used in project reporting and used as part of the invoicing process. (See attached sample of the Monitoring Report from a previous project).

ARCD has been in compliance with the Louisiana Government Audit Guide of financial records, since 2007, as reviewed by an independent accountant Darnall, Sikes, Gardes & Frederick in accordance with Statement on Standards for Accounting and Review Services issued by the American Institute of Certified public Accountants.

Since 1995, ARCD has handled numerous contracts, grants, and cooperative agreements which includes the EPA EJ Grant (EQ00F669-01) and Teche Watershed Project (Improving Water

Quality through an Integrated Watershed Approach in the Mermentau & Vermilion – Teche Basins). See FIGURE 1 below. Comparative relevance to proposed project includes working with local governments, municipalities, business, schools, and citizens, and partnering in multiple outreach activities. The completed EPA EJ Grant (EQ00F669-01) included working with such entities during the teaching, presentations, demonstrations, and experiments. Testing students' knowledge of materials presented demonstrated an **overall 20% increase in student knowledge** of (a) the causes, effects and reduction of water pollution and (b) ability to distinguish beneficial plants, animals and fish within the watershed. 386 students participated in the program--a **25% increase of the proposed number of educated and empowered student capable of maintaining a healthy watershed.** This was accomplished through project management and ability to work with multiple partners, local governments, municipalities, business, schools, and citizens.

The completed the watershed plan encompassed the ecological health of the bayou, along with the economic, recreational and cultural interests of stakeholders, and DEQ requirements for non-point source. The Project Officer was Council President, Angelique Fogleman; Finance Administrator, Sue Arnaud; and Watershed Coordinator, Kristen Kordecki.

FIGURE 1

Project	Contract or Grantor	Year	CFMS # OCR #	Contract Funds	Match	Total Project
Improving Water Quality through an Integrated Watershed Approach in the Mermentau & Vermilion – Teche Basins	Louisiana DEQ	11/08 - 09/11	672674 853-900319	$178,063	$54,425	$232,488

ARCD has prior experience in handling federal funds. One such project is Sustainable Energy and Efficiency Demonstration (SEED). See FIGURE 2. This three-phase project was to address issues of lowering renewable energy production costs by 1) Implementing energy conservation practices subsequent to on-farm Energy Audits, 2) Estimating yield and quality of potential biomass crops, 3) Demonstrating a charcoaling process to reduce the size and weight of biomass

FIGURE 2

Project	Contract or Grantor	Year	Number	Contract Funds	Match	Total Project
Sustainable Energy & Efficiency Demonstration	USDA - NRCS	3/07 - 10/10	69-7217-07-07	$24,100	$32,100	$56,200

ARCD has maintained its partnerships with various Federal, State, and local agencies for the past 20 years – a testament to this organization's competence to administer and manage sizeable projects. ARCD is well known for its integrity and ability to successfully produce high-quality project. Precise documentation and proficient billing (see attached example of documentation / billing) are part of the superb service. ARCD has a large database of partners who have the capability and knowledge to produce materials and assistance needed to complete projects. ARCD intends use the same means of accounting methodology and reporting as used for the 2013-2014 EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01)

Angelique Fogleman, Administrative Assistant, will be the Project Manager. Sue Arnaud, Finance Administrator, has been with ARCD over ten years and will be Finance Administrator for this project. Resumes for Ms. Fogleman and Ms. Arnaud are attached to grant application.

VI. Qualification of Project Manager

Project Manager will be Angelique Fogleman. Ms. Fogleman served as the project manager for the EPA EJ Grant Partners for a Healthier Bayou Teche Watershed (EQ00F669-01) and was instrumental in developing the teaching model which will also be used in the proposed grant. Ms Fogleman also serves as Council President (6 consecutive years) and is a ARCD Board Member (8 years). Ms. Fogleman conducts public relations activities to increase ARCD's presence in the community to promote its mission, programs and projects.

Ms. Fogleman garnered a local grant from Lafayette City Parish Consolidated Government 2014-2015 External Agencies Funding Program to work with Northside High School to create and install an outdoor learning center to be used in conjunction with a school garden. The garden will be used to teach Environmental Science students how to grown their own fresh vegetables, herbs and fruit trees as well as how to cook using fresh vegetables and herbs. With 70% of students on "free" or "reduced lunch", this project is an effort to help teach students how to be self sufficient with regard to healthy cooking and eating.

Ms. Fogleman shows her ability to work with multiple partners as in the current ongoing project Annie's Project. Working with Capital Resource Conservation and Development, Inc. (Capital RC&D) Ms. Fogleman and Ms. Deborah Cross-Young coordinate teaches women in agricultural about the six risk management areas needed to be successful through a USDA Natural Resource Conservation Service recently completed the Louisiana Women in Agriculture

Ms. Fogleman administered the completed Louisiana Coastal Prairie Assessment and Restoration Project (CFMS #685531) in partnership with local landowners in Midland & Estherwood and the La Dept of Wildlife and Fisheries Natural Heritage. .

Ms. Fogleman worked with multiple partners (Audubon of AR, University of Louisiana at Lafayette, USDA NRCS, USDA Rural Development, USDA Farm Service Agency, National Agricultural Statistics Services (NASS), US Geological Survey, Ducks Unlimited, LSU-Ag Center, and Southern University Ag Center) to host a Acadiana Small Farm Conference for approximately 45 local farmers in ARCD. Ms. Fogleman proved that she has the ability to work with multiple partners, while enhancing her organizational and public speaking skills.

Ms. Fogleman successfully garnered a small grant from LA Dept of Agriculture & Forestry to purchase 150 fire alarms for the elderly, and acquired fire protection material for distribution to five volunteer fire departments. Through volunteering Ms. Fogleman gained the true sense of community that will benefit the Partners for a Healthier Bayou Teche Watershed project.

VII. Past Performance in Reporting on Outputs and Outcomes

EJSG Logic Model Template for Performance Measures/Milestones was utilized during the EPA EJ Grant (EQ00F669-01).

This will be determined through the description of how progress is documented and/or reported, towards achieving the expected outputs and outcomes under prior and/or current assistance agreements, and if progress was not made towards achieving the expected outputs and outcomes, whether the documentation and/or reports satisfactorily explain why not.

At beginning of project, partnering organizations were contacted to participate in creating the teaching model to address water quality issues. School administrators and teachers were contacted to begin the program. A minimal of 8 teaching hours and 4 activity hours were proposed; however, ARCD was given permission to exceed the number of hours by each school administrative. Students were given pre and post-tests to track progress of students' knowledge on the causes, effects and reduction of water pollution and (b) ability to distinguish beneficial plants, animals and fish within the watershed, students were given pre and post-tests. Test assessments included tracking the number of students in each session as well as names of teachers and classes that participated in the program in order to track and verify the number of students, classes, and class hours. Presentations and discussions were had regarding water quality and public use of Bayou Teche. Students were encouraged to participate in the Tour du Tech which is an annual recreational event. Many students were unaware of such event or that recreation was allowed on Bayou Teche.

During semi-annual phase, partnering organizations were contacted to assist with revamping of Passports. Passports were printed and given to the school and public in order to help educate the community. A signature sheet was used to track the number of Passports that were distributed by ARCD during a public event hosted by the Teche Project.

Final reports on educational and activity sessions as well as accomplishments were generated and disseminated during annual phase which showed an increase number of student participation in water quality management and empowerment to maintain a healthy Bayou Teche

VIII. Quality Assurance Project Plan Information
It is not anticipated that this project would need a quality assurance project plan.

IX. Detailed Budget
The detailed budget is attached to the Project Narrative.

X. Project Performance Measure/Milestone
The Project Performance Measures is attached to Project Narrative.